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10/525,488	02/23/2005	Manish Garg	NL03 0363 US	4884

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EXAMINER	
BAE, JI H	

ART UNIT	PAPER NUMBER
2115	

NOTIFICATION DATE	DELIVERY MODE
12/24/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.	Applicant(s)	
	10/525,488	GARG ET AL.	
	Examiner	Art Unit	
	JI H. BAE	2115	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-7,11-15,17,19-21,23 and 24* is/are rejected.

7)☒ Claim(s) *3,8-10,16,18,22 and 25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8 December 2007 has been entered.

Response to Amendment

Applicant filed a request for continued examination on 24 September 2008, along with a petition for revival of an application abandoned unintentionally. No new amendments were submitted by the applicant. Therefore, the current Office Action is in response to the claims amendments and arguments filed on 8 December 2007.

Applicant has amended the independent claims to recite a step of transitioning "from an active state to a standby state ***for the purpose of reducing power consumption***". On pp. 8 of applicant's remarks, applicant argued that Chang does not teach that the standby mode is entered for reducing power consumption. The examiner respectfully disagrees.

The examiner notes that on pp. 8 of applicant's remarks, the applicant appears to cite the "Response to Arguments" section from the Final Office Action dated 4/16/2008. However, a portion of that text has been excised. The original response (with emphasis) is re-printed below.

> Applicant's arguments filed on 2 February 2007 have been fully considered but they are not persuasive.
>
> In applicant's remarks, applicant states that Chang, U.S. Patent No. 7,127,228 B2, does not teach decreasing the regular power supply, but rather detecting a decrease in the regular power supply. ***Additionally, applicant states that Chang does not teach a power conservation mechanism***, and that Chang is directed towards a power failure recovery mechanism.

In response, the examiner points to Chang, col. 2, lines 15-27 and col. 3, line 51 to col. 4, line 4. Based on these cited portions of Chang's disclosure, the examiner agrees with the applicant's assertion that Chang teaches detecting a decrease in the regular power supply. However, the examiner points out that when the context of the cited portions of Chang's disclosure are taken into account, it is clear that upon detecting a decrease in the regular power supply below a *threshold level*, the power supplied to the circuit is further decreased by cutting off the power supply. ***Additionally, Chang's disclosure teaches that the invention minimizes power consumption during the standby mode [col. 1, lines 63-67, col. 4, lines 19-25]***. That Chang's standby mode occurs in response to a power failure event is not relevant, since applicant's claim language does not restrict standby mode to only non-power failure situations.

Additionally, the examiner notes that applicant has not addressed the objections/rejections unrelated to the prior art. Therefore, the prior grounds of rejection/objection remain standing.

Although Chang teaches that the standby mode is entered in response to a power failure, Chang also teaches that when the power failure occurs, certain necessary components remain powered while certain other components are disconnected [col. 3, lines 26-34, 30-41]. This step is carried out to minimize power consumption of a backup battery which provides power during a power failure [col. 1, lines 63-67]. Thus, the standby mode of Chang is defined by being powered by a backup battery during a power failure, which necessitates that unnecessary components are inoperative so as to reduce power consumption and therefore extend the time that the device can be powered by the battery.

Claim Objections

Claims 5, 8, 10, and 21 are objected to because of the following informalities: the following uses of the "greater than or equal to" operator (≥) are not understood:

1. Claim 5, line 2: ≥ LOW
2. Claim 8, lines 3 and 4: ≥ ON, ≥ OFF
3. Claim 10, line 3: ≥ HIGH, ≥ LOW
4. Claim 21, lines 2 and 3: ≥ HIGH, ≥ LOW.

Claim 17 is objected to because of the following informalities: recitation of "the state holding unit" in lines 3-4. The examiner infers that applicant's intent was to recite either the data storage unit or the state retaining circuit. The examiner further notes that the term "state holding unit" does not appear in the disclosure.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4-7, 11-15, 17, 19-21, and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Chang et al., U.S. Patent No. 7,127,228 B2. Chang was previously cited in a prior Office Action.

Regarding claim 1, Chang teaches a method for reducing the power consumption in a state retaining circuit **[Fig. 2]** during a standby mode, comprising:

in an active state, providing a regular power supply **[main power source 150']** and a standby power supply **[backup power source 160']** to the state retaining circuit;

for a transition from an active state to a standby state for the purpose of reducing power consumption **[col. 1, lines 63-67]**, decreasing the regular power supply to ground level **[Fig. 3, S310-S330, col. 2, lines 15-27]** and maintaining the standby power supply thus providing circuit

elements of the state retaining circuit with enough power for retaining the state during standby mode;

and for a transition from the standby state to the active state, increasing the regular power supply from its ground level to its active level **[col. 2, lines 53-59]**.

Regarding claims 4, 5, and 19 Chang teaches a control signal held to a low level during standby mode **[Fig. 2, line 122 is low because I/O device and radio parts are disconnected from main power during power failure; col. 3, lines 44-46; col. 4, lines 53-57]**.

Regarding claims 6, 7, and 20 Chang teaches that the control signal is held by means internal and external to the state retaining circuit **[col. 4, lines 53-57, power management unit (internal) disconnects main power source (external) from circuit block with high power consumption]**.

Regarding claim 11, Chang teaches a state-retaining circuit comprising:

a control unit for providing at least one control signal **[Fig. 2, power management unit 120' and line 122]**;

a data input and output unit for providing at least one input signal and at least one output signal **[processor 140 and various input and output signals]**;

a data storage unit for holding at least a part of the state of the circuit during a standby mode entered for reducing power consumption **[SRAM 190]**;

first means for coupling a power supply from a regular power supply to the circuit elements during an active mode **[main power source 150' and line 122]**;

second means for coupling a power supply from a standby power supply to at least part of the data storage unit during the active mode and the standby mode **[backup power source 160' and line 124 to SRAM]**.

Regarding claim 12, Chang teaches that the control unit is connected to the regular power supply and the standby power supply for retaining a state of the control signal **[Fig. 2, power management unit 120' is connected to main power source, backup power source, and line 122]**.

Regarding claims 13 and 14, Chang teaches that the data input unit is connected to the regular power supply and the control signal **[Fig. 2, processor 140 connected to main power by line 122]**.

Regarding claim 15, Chang teaches that the data storage unit is connected to the regular power supply and the standby power supply **[Fig. 2, SRAM connected to main power and backup power by power management unit]**.

Regarding claim 17, Chang teaches that the data output unit has a terminal for receiving a signal from the data storage unit **[Fig. 2, data lines 148 between SRAM and processor]** and at least one output terminal for outputting the received signal **[col. 4, lines 64-67, processor restores the state of all components in the system based on SRAM data]**.

Regarding claim 21, Chang teaches that the means for holding the control signal is connected to a standby signal that is high during standby mode and low otherwise **[col. 4, lines 53-57, turn-off signal 142 is asserted to disconnect line 122 from power]**.

Regarding claim 23, Chang teaches an electronic device comprising:

a regular power supply **[Fig. 2, main power source 150']**;

a standby power supply **[backup power source 160']**;

a first circuit portion coupled to the regular power supply **[I/O device and radio part connected to main power source via line 122]**;

a second circuit portion coupled to the regular power supply, the second circuit portion comprising a state retaining circuit for retaining at least a part of a state of the first circuit portion

during a standby mode of the electronic device **[col. 4, lines 64-67, processor restores state for system components based on SRAM data]** entered for the purpose of reducing power consumption, the state retaining circuit comprising:

a control unit for providing at least one control signal **[Fig. 2, power management unit 120' and line 122]**;

a data input and output unit for providing at least one input signal and at least one output signal **[processor 140 and various input and output signals]**;

a data storage unit for holding at least a part of the state of the first circuit portion during the standby mode **[SRAM 190]**;

the regular power supply being arranged to supply power to the data storage unit during an active mode of the electronic device **[main power source 150' and line 122]**;

the standby power supply being arranged to supply power to at least a part of the data storage unit during the active mode and the standby mode **[backup power source 160' and line 124 to SRAM]**.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang in view of Roberts et al., U.S. Patent No. 6,333,671 B1. Roberts was previously cited in a prior Office Action.

Regarding claim 2, Chang teaches the method of claim 1, but does not teach decreasing the standby power supply from an active level to a lower level.

Roberts teaches a method wherein an internal voltage of a semiconductor is lowered from an activated mode level when the semiconductor enter a sleep mode, and increases the internal voltage when entering an active mode **[col. 2, lines 24-28]**.

It would have been obvious to one of ordinary skill in the art to combine the teachings of Chang and Roberts by modifying Chang to reduce the voltage of the backup power source, a taught by Roberts. Both Chang and Roberts are directed towards electronic systems that employ a standby mode to preserve the contents of volatile memory. Roberts teaches that it is desirable to lower the voltage in such systems as much as possible, so as to reduce leakage current, while maintaining the lowest voltage necessary to retain the state of the memory. The teachings of Roberts would improve Chang by providing a way to reduce the leakage currents while simultaneously preserving the contents of the memory **[Roberts, col. 1, lines 16-31, col. 2, lines 8-13]**.

Regarding claim 24, Chang/Roberts teaches the method of claim 1-2, and also the electronic device to implement the claimed method.

Allowable Subject Matter

Claims 3, 8-10, 16, 18, 22, and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JI H. BAE whose telephone number is (571)272-7181. The examiner can normally be reached on Monday-Friday, 10 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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